UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION

PARKERVISION, INC., Plaintiff, vs. INTEL CORPORATION, Defendant.	Civil Action No. 6:20-cv-00108-ADA **JURY TRIAL DEMANDED** PUBLIC VERSION [redacted]

DEFENDANT INTEL CORPORATION'S RESPONSE TO PLAINTIFF PARKERVISION'S MOTIONS FOR SUMMARY JUDGMENT

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I. INTRODUCTION

ParkerVision's motion (Dkt. 176, "Mot.") fails to demonstrate that it is entitled to judgment as a matter of law. ***First***, ParkerVision's argument for summary judgment on marking fails. With respect to its Milo product, ParkerVision incorporated a Realtek chip in its Milo product without marking and subsequently accused ***products that used the same Realtek chip*** of infringing five of the six asserted patents. It is Intel, not ParkerVision, that is entitled to summary judgment on ParkerVision's failure to mark the Milo product. On the PV5870 and Samsung Galaxy S5 and S6, Intel exceeded its initial burden of production, but ParkerVision has not met its burden of persuasion. ParkerVision ignores the evidence cited in Intel's interrogatory responses and impermissibly tries to shift the burden of persuasion to Intel.

Second, each of ParkerVision's arguments seeking summary judgment of no invalidity is without merit. ParkerVision's broadest argument—that Dr. Subramanian impermissibly concluded that the asserted claims are invalid when stretched to purportedly cover the Intel products under ParkerVision's infringement theories—ignores binding Federal Circuit precedent that expressly endorses the precise type of analysis used by Dr. Subramanian. *See 01 Communique Lab., Inc. v. Citrix Sys., Inc.*, 889 F.3d 735, 741-42 (Fed. Cir. 2018) ("[t]here [is] nothing improper" with an accused infringer arguing "that if [the patentee] attempted to expand the scope of its claims to include systems [like the accused products], then the claims would be invalid in light of the prior art"). The rest of ParkerVision's invalidity arguments are replete with factual disputes and, more generally, miss the forest for the trees: they focus on isolated statements in Dr. Subramanian's report and entirely mischaracterize his careful, detailed invalidity analysis.

Finally, ParkerVision's argument that it is entitled to summary judgment that the Intel Products-At-Issue meet certain purported "key limitations" of certain Asserted Claims also fails. ParkerVision's brief does not even specify which limitations ParkerVision argues are satisfied—

instead referring vaguely to "the charging and discharging claim elements"—much less address the ample evidence showing non-infringement. And the only evidence that ParkerVision identifies does not support its argument. ParkerVision's motion should be denied in its entirety.

II. LEGAL STANDARD

Summary judgment is proper only "if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247 (1986). To prevail, a movant must provide evidence that establishes "beyond peradventure ***all*** of the essential elements of the claim or defense."[1] *Fontenot v. Upjohn Co.*, 780 F.2d 1190, 1194 (5th Cir. 1986) (emphasis in original).

III. INTEL, NOT PARKERVISION, IS ENTITLED TO SUMMARY JUDGMENT ON MARKING

"The burden of proving compliance with marking is and at all times remains ***on the patentee***." *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1367 (Fed. Cir. 2017). While the party raising a marking defense "bears an initial burden of production to articulate the products it believes are unmarked 'patented articles' subject to § 287," it is a "low bar." *Id.* at 1368. "The alleged infringer need only put the patentee on notice that he or his authorized licensees sold specific unmarked products which the alleged infringer believes practice the patent." *Id.*; *see generally* Dkt. 172.

A. Intel, Not ParkerVision, Is Entitled to Summary Judgment That ParkerVision Failed To Mark Its Milo WiFi Products.

ParkerVision's motion for summary judgment on the Milo products effectively concedes that there is no disputed issue of material fact regarding the marking of those products. As a result,

[1] Emphases are added, unless otherwise noted.

for the reasons provided in Intel's motion for summary judgment of no pre-suit damages (Dkt. 172), summary judgment should be granted in ***Intel's*** favor on these products.

ParkerVision ***does not dispute*** that its Milo WiFi was an unmarked product that it sold in the U.S. between 2017-2019—during the term of the patents. Mot. at 10-12. ParkerVision further admits that its Milo WiFi products used a RealTek WiFi transceiver chip—the RTL8811AU. Ex. 1, PV Suppl. Resp. to Interrog. No. 13 (June 21, 2022) at 32 ("All Milo products used the RTL8811AU."); Dkt. 176-7, Parker Decl., ¶6 ("All ParkerVision Milo products includes [sic] a Realtek RTL8811AU transceiver chip.").

Critically, in a suit against Buffalo, ParkerVision accused wireless products that use that same RealTek chip of infringing the asserted patents. As ParkerVision's CEO and ***30(b)(6) designee on marking*** and other litigation concerning the asserted patents (Ex. 2, PV O&R to 30(b)(6) Notice) confirmed, ParkerVision accused ***all*** Buffalo AirStation products, at least some of which use the RTL8811AU chip.[2] Ex. 3, Parker Dep. at 613:20-24 ("Q. And ParkerVision accused all of Buffalo's AirStation series and wireless [N-Media] Bridge products of infringing its patents in that case; correct? A. Yes. I see that in the complaint."); Dkt. 172-2, Buffalo Complaint, ¶21.[3] Intel identified to ParkerVision a Buffalo AirStation Product within the scope of ParkerVision's allegations against Buffalo that used the RTL8811AU. Ex. 4, Intel Suppl. Resp. to Interrog. No. 14 (July 1, 2022) at 52-54 (citing Ex. 5, 96100DOC00119098 (User Manual for

[2] All exhibits are attached to the Declaration of Harry Hanson, filed concurrently herewith.

[3] ParkerVision argues that Jeff Parker, notwithstanding being the 30(b)(6) designee on these topics, lacked "independent knowledge of what chips were accused of infringement." Mot. at 11-12 n.3. But his testimony was offered on behalf of the company, and ParkerVision had a duty to provide an educated witness, regardless of whether Mr. Parker had independent knowledge. *Brazos River Auth. v. GE Ionics, Inc.*, 469 F.3d 416 (5th Cir. 2006) ("[A] rule 30(b)(6) designee does not give his personal opinions, but presents the corporation's 'position' on the topic."). ParkerVision cannot now disclaim the testimony simply because it was unhelpful to its position.

certain Buffalo AirStations); Ex. 6, 96100DOC00119094 at -095 (photographs of certain Buffalo AirStations showing RTL8811AU chip)). Intel has therefore plainly met its burden of production with respect to the Milo WiFi products. *Semcon IP Inc. v. Huawei Device USA Inc.*, 2017 WL 6343771, at *3 (E.D. Tex. Dec. 12, 2017) ("By identifying a complaint in which Semcon's predecessor accused Intel products of infringing the '061 patent, which resulted in the relevant license agreement between Transmeta and Intel, TI met its initial burden of production.").

ParkerVision's arguments to the contrary fail. ***First***, ParkerVision sets up a straw man by arguing that Intel failed to investigate if the Buffalo AirStation Products were sold, used, or offered for sale in the U.S. Mot. at 12. ***ParkerVision*** accused the Buffalo products containing the RealTek chip of infringement, and "[a] court would be hard-pressed to conclude an alleged infringer could not rely on [infringement] allegations by the patentee to meet its burden under *Arctic Cat*." *KAIST IP US LLC v. Samsung Elecs. Co.*, 2018 WL 10498197, at *3 n.1 (E.D. Tex. 2018).

Second, ParkerVision argues that ParkerVision could not assert the RTL8811AU infringed because it "did not know how that RTL8811AU chip was configured or operated." Mot. at 11. But in the Buffalo Complaint, ParkerVision accused ***all*** AirStation products—some of which indisputably use the RTL8811AU chip. Dkt. 172-2, Buffalo Complaint, ¶¶21, 73, 96, 112, 122, 134. *See KAIST IP*, 2018 WL 10498197, at *3 n.1; *Semcon*, 2017 WL 6343771, at *1.

Third, ParkerVision cannot overcome its prior allegations with self-serving and contrary statements from its technical expert. ParkerVision's expert, Dr. Steer, now asserts that the Realtek RTL8812BU, RTL8192BU, or RTL8188ER "chips have different functionalities and no conclusions can be drawn about the similarities or differences between the configuration/operation of these chips and the Realtek RTL8811AU." Mot. at 11. But Dr. Steer does not identify any differences in the method of down-conversion between the RTL8811AU and other Realtek chips.

Ex. 7, Steer Reb. Rpt., ¶82 ("[N]o conclusions can be drawn about the similarities or differences between the configuration/operation of the Realtek RTL8811AU and Realtek RTL8192BU and RTL8188ER."). Instead, ParkerVision and its expert have disclaimed all knowledge of how the RTL8811AU chip works, which means it cannot meet ***its burden*** to show that the Milo WiFi does not practice the asserted patents.

Intel, not ParkerVision, is entitled to summary judgment on marking.

B. ParkerVision Is Not Entitled to Summary Judgment On The PV5870.

1. The '736 and '673 patents.

ParkerVision is not entitled to summary judgment with respect to marking of the PV5870 and the '736 and '673 patents. ParkerVision does not dispute that it failed to mark the PV5870 with the '736 and '673 patents or that it offered the PV5870 for sale in the U.S. after issuance of the '736 and '673 patents. Additionally, Intel provided claim charts showing that, based on ParkerVision's own allegations, the PV5870 practiced claims of the '736 and '673 patents. Ex. 8, Intel Suppl. Resp. to Interrog. No. 14 (Apr. 22, 2022) at 24-30.

ParkerVision criticizes Intel's claim charts because they are "based on a claim chart ParkerVision submitted in the ITC case … mapping the PV5870 to *different patents*." Mot. at 9 (emphasis in original). But Dr. Steer's disagreement with Intel's claim charts—which plainly exceeded Intel's initial burden of production under *Arctic Cat*—does not relieve ParkerVision of ***its*** burden to prove compliance with marking. *Arctic Cat*, 876 F.3d at 1369 ("The alleged infringer need not produce claim charts to meet its initial burden of identifying products."). Moreover, ParkerVision entirely ignores the evidence Intel cited to ParkerVision showing the close relationship between the patents ParkerVision alleged were practiced by the PV5870 (including the '902, '474, '725, and '528 patents) and the '736 and '673 patents. Ex. 8, Intel Suppl. Resp. to Interrog. No. 14 (Apr. 22, 2022) at 23-32; *see also* Ex. 9, Steer Op. Rpt., ¶459 ("the patents-in-suit

generally relate to ***the same down-conversion*** technology."). This "close relationship" is sufficient to meet Intel's burden of production under *Arctic Cat*. *See Innovation Scis. v. HTC*, 2020 WL 5798249, at *2 (E.D. Tex. 2020) ("In support of this belief, HTC points to Innovation's assertion that the identified products practice the '425 patent; ***the close relationship between the '425 patent and the asserted patents***; and Dr. Wong's own statement that she believes LG's smartphones practice all of Innovation's smart home patents."). ParkerVision, by contrast, has not even attempted to meet its burden of showing that the PV5870 does not practice the '673 and '736 patents, and summary judgment is therefore inappropriate.

2. The '902, '474, '725, and '528 patents.

ParkerVision does not dispute that the PV5870 was sold in the U.S. and practiced the '902, '474, '725, and '528 patents. Ex. 10, PV Suppl. Resp. to Interrog. No. 12 (Feb. 2, 2022). ParkerVision asserts that it is entitled to summary judgment on the PV5870 and those four patents because the packaging for the PV5870 purportedly included a statement directing individuals to its homepage: ParkerVision.com. Mot. at 9-10. That argument fails for at least two reasons.

First, ParkerVision's generic reference to its homepage is insufficient under Section 287. Instead of directing individuals to the "address of a posting on the Internet, accessible to the public without charge for accessing the address, that associates the patented article with the number of the patent"—as required by § 287—ParkerVision directed individuals only to its homepage: ParkerVision.com. ParkerVision's homepage never associated the PV5870 with any asserted patent—indeed, it never mentioned any asserted patent and mentioned the PV5870 only once (as addressed below). Accordingly, this disclosure cannot satisfy the plain language of § 287(a). *Cf. A to Z Machining Serv., LLC v. Nat'l Storm Shelter, LLC*, 2011 WL 6888543, at *3 (W.D. Okla. 2011) (granting summary judgment when a patentee failed to meet the language of Section 287).

Second, the sole mention of the PV5870 on ParkerVision's homepage contained a link to a webpage about the PV5870, but the PV5870 webpage to which the homepage was linked likewise did not list any patents. Ex. 11, 96103DOC00335457 (ParkerVision.com) at 463-64, 467-68, 471-72, 475-76, 479-80.[4]

Because ParkerVision's packaging directed individuals only to ParkerVision's homepage, which in turn only directed individuals to the PV5870 webpage, and because ***neither page listed patent numbers***, ParkerVision failed to connect the website listed on its packaging with the website listing the patents, as required to meet its marking obligations. *Mfg. Res. Int'l Inc. v. Civiq Smartscapes LLC*, 397 F. Supp. 3d 560, 578 (D. Del. 2019) (virtual marking cannot create a "research project for the public."). At a minimum, these facts create a disputed issue of material fact precluding summary judgment.

C. ParkerVision Is Not Entitled To Summary Judgment On Marking The Samsung Galaxy S5 And Samsung Galaxy S6.

ParkerVision argues that it is entitled to summary judgment on the marking of the Samsung Galaxy S5 and S6 (Mot. at 5-8), but Intel has met its burden with respect to these products as well.

First, ParkerVision previously alleged in other litigations that the Samsung Galaxy S5 and S6 infringed the '528 patent with either Samsung or Qualcomm transceivers. Ex. 12, PV_055517 (Samsung Galaxy S6 Claim Chart); Ex. 13, PV_055558 (Samsung Galaxy S5 Claim Chart).

Second, ParkerVision's license and covenant-not-to-sue with Samsung authorized Samsung to use either Qualcomm or Samsung transceivers. Ex. 14, PVMDFL0000275 (Samsung License). Thus, as Intel noted, the use of Qualcomm or Samsung transceivers in Samsung phones

[4] ParkerVision had two versions of the PV5870 webpage, one of which listed patents (*compare* Ex. 11, 96103DOC00335457 at 463-464, 467-468, 471-472, 475-476, 479-480, *with* Dkt. 176-18 (SJ Mot., Ex. 18)), but ParkerVision's homepage never linked to the version that listed patents.

created a marking obligation. Ex. 4, Intel Suppl. Resp. to Interrog. No. 14 (July 1, 2022) at 51-52 (citing *In re Yarn Processing Pat. Validity Litig. (No. II)*, 602 F. Supp. 159, 169 (W.D.N.C. 1984)).

Third, Intel demonstrated that the Samsung Galaxy S5 and S6 are unmarked by pointing to (1) the lack of a requirement to mark in the Samsung License; and (2) Samsung Galaxy S5 and S6 packaging that does not have patent numbers. Ex. 8, Intel Suppl. Resp. to Interrog. No. 14 (Apr. 22, 2022) at 35-37 (citing Ex. 14, PVMDFL0000275 (Samsung License); Ex. 15, 96103DOC00247381-82 (Samsung Galaxy S5 packaging); Ex. 16, 96103DOC00247383-85 (Samsung Galaxy S6 packaging)). ParkerVision does not dispute that Samsung never marked the Samsung Galaxy S5 or S6. Ex. 1, PV Suppl. Resp. to Interrog. No. 13 (June 21, 2022) at 30-32.

Fourth, Intel provided evidence that the Samsung Galaxy S5 and S6 were available for sale in the U.S. ***after*** the Samsung License. Ex. 4, Intel Suppl. Resp. to Interrog. No. 14 (July 1, 2022) at 50-52 (citing Ex. 11, 96103DOC00335457 (2017 Samsung US Website Printouts); Ex. 17, PVMDFL0003242 (market report for Samsung Galaxy S5 US Sales); Ex. 18, PVMDFL0003242 (market report for Samsung Galaxy S6 US Sales)).

ParkerVision argues that Intel "fails to identify any chips used in a Samsung phone sold/offered for sale after July 13, 2016." Mot. at 5. But ParkerVision's infringement allegations against the Samsung Galaxy S5 and S6 in two other actions that Intel cited were not limited to specific model years. Ex. 19, ITC Complaint, ¶¶93, 111; Ex. 20, Florida Complaint, ¶¶31-33. Intel also cited evidence showing U.S. sales after July 13, 2016 of the products ParkerVision accused of infringement. Ex. 4, Intel Suppl. Resp. to Interrog. No. 14 (July 1, 2022) at 51-52 (citing Ex. 17, PVMDFL0003242 (US sales of the Samsung Galaxy S5 until Q3 2017); Ex. 18, PVMDFL0003242 (US sales of the Samsung Galaxy S6 until Q2 2018)). That satisfied Intel's burden. *Semcon*, 2017 WL 6343771, at *3 ("By identifying a complaint in which Semcon's

predecessor accused Intel products of infringing the '061 patent, which resulted in the relevant license agreement between Transmeta and Intel, TI met its initial burden of production."). Moreover, ParkerVision cites no evidence that the chips in the Samsung Galaxy S5 or S6 changed after July 13, 2016: Dr. Steer states that the transceiver chip changed between the Samsung Galaxy S5 and the Samsung Galaxy S6, but not that it changed after July 13, 2016. Mot. at 6-7.

Intel's disclosure satisfies *Arctic Cat*. *Realtime Data LLC v. Echostar Corp.*, 2018 WL 11364376, at *5-6 (E.D. Tex. Oct. 16, 2018) (defendants met burden of production by identifying products plaintiff previously accused of infringing but subsequently licensed and noting that license agreement did not require marking and that products were not marked). At a minimum, these facts create a disputed issue of material fact warranting denial of ParkerVision's motion.

IV. PARKERVISION IS NOT ENTITLED TO PARTIAL SUMMARY JUDGMENT ON INVALIDITY

A. ParkerVision Is Not Entitled To Summary Judgment That The Asserted Claims Of The '736 Patent Are Not Invalid.

ParkerVision argues that it is entitled to summary judgment of no invalidity of '736 patent claim 1 (and dependent claim 6) because claim 1 recites that a "***first*** switch is off outside the ***second*** sampling aperture," but, according to ParkerVision, Dr. Subramanian improperly changed "first switch" to "second switch" and thereby allegedly performed the wrong invalidity analysis. Mot. at 12-13. ParkerVision is wrong. Dr. Subramanian—just like ParkerVision and its expert—recognized an obvious typographical error in claim 1 and analyzed the claim correctly.

Claim 1 recites two switches—a "first switch" and a "second switch"—that are turned on and off by first and second control signals, respectively. The claim recites that "the ***first*** switch is on during the ***first*** sampling aperture and … the ***first*** switch is off outside the ***first*** sampling aperture." For the second switch, the claim language parallels the "first switch" language, but there is an obvious typographical error regarding which switch is off during the second sampling

aperture: "the ***second*** switch is on during the ***second*** sampling aperture and … the ***first [sic: second]*** switch is off outside the ***second*** sampling aperture." Dkt. 1-7, '736 patent, cl. 1.

The typographical error in claim 1 is obvious from the face of the patent. ***First***, the language of the "second switch" limitation is inconsistent with other claim language. As noted above, the "second switch" language is inconsistent with the parallel language for the "first switch" limitation in claim 1. It is also inconsistent with the parallel "third switch" and "fourth switch" limitations in dependent claim 11, which refer to a particular numbered switch being off outside the ***same-numbered*** sampling aperture. *See* Dkt. 1-7, '736 patent, cl. 11 ("the ***third*** switch is on during the ***third*** sampling aperture and … the ***third*** switch is off outside the ***third*** sampling aperture" and "the ***fourth*** switch is on during the ***fourth*** sampling aperture and … the ***fourth*** switch is off outside the ***fourth*** sampling aperture"). ***Second***, the "second switch" limitation is inconsistent with the Abstract, which correctly recites that the "***second*** switch is off outside the ***second*** sampling aperture." *Id.*, at Abstract. ***Third***, the "second switch" limitation is inconsistent with the specification. If the claim required the first switch to be ***on*** during the first sampling aperture, and off outside ***both*** the ***first*** and ***second*** sampling apertures, then the first and second sampling apertures would have to be coterminous.[5] But the patent contains no disclosure of two switches controlled by coterminous sampling apertures.

Moreover, ***ParkerVision and its expert (Dr. Steer) have repeatedly interpreted the claim in the same way that Dr. Subramanian has***—recognizing that "first" should be "second."

First, ParkerVision's infringement contentions—to which Dr. Subramanian was responding in his opening report—applied claim 1 in the same way that Dr. Subramanian did. For

[5] Indeed, under a literal interpretation of claim 1 of the of '736 patent including the typographical error, the Intel products would not infringe for an additional reason—the alleged first and second sampling apertures in the Intel products undisputedly are not coterminous.

example, in its November 6, 2021 Final Infringement Contentions ("FICs"), ParkerVision asserted that Intel's SMARTi 5 products purportedly infringe the '736 patent [redacted]:

- [redacted]
- [redacted] *Id.* at 21.

In fact, ParkerVision served seven claim charts asserting that the Intel products [redacted].[6]

Second, Dr. Steer's rebuttal report applied claim 1 in the same way as Dr. Subramanian. In his conception/reduction-to-practice analysis, Dr. Steer alleges that a ParkerVision patent application supports a reduction to practice of the "second switch" element because it discloses that "the ***second*** switch [not the ***first*** switch] is off outside the ***second*** sampling aperture." Ex. 22, Steer Reb. Rpt., Ex. D-5 at 29.

Third, Dr. Steer's opening report applied the same interpretation as Dr. Subramanian: Each claim chart addressing '736 patent claim 1 asserts that the Intel products [redacted]. Ex. 23, SMARTi 4G chart, pp. 31-41; Ex. 24, SMARTi 4.5 chart, pp. 37- 46; Ex. 25, SMARTi 5 chart, pp. 55-70; Ex. 26, SMARTi 6T chart, pp. 55-70; Ex. 27, SMARTi 7.1 chart, pp. 37-49; Ex. 28, SMARTi 8 chart, pp. 35-48.[7]

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[6] Ex. 29, June 26, 2020 Preliminary Contentions (PMB5750), pp. 5-7; Ex. 21, Nov. 6, 2021 FICs (SMARTi 5), pp. 20-31; Ex. 31, Nov. 6, 2021 FICs (SMARTi 6), pp. 22-34; Ex. 32, Nov. 6, 2021 FICs (SMARTi 7), pp. 17-25; Ex. 33, Nov. 6, 2021 FICs (SMARTi 8), pp. 18-29; Ex. 34, May 24, 2022 FICs (SMARTi 4G), pp. 24-31; Ex. 35, June 9, 2022 FICs (SMARTi 4.5), pp. 27-33.

[7] Dr. Steer's opening report includes an alternative analysis based on the claim language ***with*** the typographical error, but this alternative analysis alters the claim language in a different, improper way. Dr. Steer states that [redacted] Ex. 25, SMARTi 5 chart, p. 55.

B. ParkerVision Is Not Entitled To Summary Judgment That The Asserted Claims Reciting An "Energy Transfer System" Are Not Invalid.

ParkerVision seeks summary judgment that all but one of the asserted claims are not invalid because Dr. Subramanian allegedly "ignores" the requirement that the "storage element" be part of "an energy transfer system." Mot. at 13-14. This argument mischaracterizes his analysis, which correctly addressed each claim element in light of ParkerVision's infringement contentions.

As explained in Section IV(C) below, Dr. Subramanian concludes, among other things, that if the claims are expanded to allegedly cover Intel's products (as set forth in ParkerVision's infringement contentions), then the claims would be invalid, consistent with the type of analysis approved by the Federal Circuit in *01 Communique Lab., Inc. v. Citrix Sys., Inc.*, 889 F.3d 735, 741-42 (Fed. Cir. 2018). Dr. Subramanian performed a careful, element-by-element analysis, comparing the prior art against ParkerVision's infringement claim charts for each element.

For the "storage element" limitations, Dr. Subramanian addressed the assertions in ParkerVision's claim charts that various Intel [redacted] ParkerVision's claim charts for these limitations did not use the phrase "energy transfer system," much less explain how the Intel capacitors allegedly satisfy the three requirements that ParkerVision's motion says are required for an "energy transfer system."[9]

This analysis changes the claim, effectively inserting the underlined words: "there is a period of time when the first switch is off outside the second sampling aperture"—thereby allowing the claim to be satisfied if there is any "period of time" when the first switch is off outside the second sampling aperture. But the literal language of the claim requires that the first switch is "off outside the second sampling aperture"—i.e., whenever the second switch is off—not just during a portion of that time. In any event, even if this new interpretation (***not*** presented in ParkerVision's infringement contentions) were correct, Dr. Subramanian substantively addressed this interpretation in his invalidity analysis, showing that a [redacted] —was known in the prior art and would have been obvious. *See, e.g.*, Ex. 30A, Sub. Op. Rpt., ¶¶195, 601-609, 1265-74, 1373-86.

[8] *See, e.g.*, Ex. 30A, Sub. Op. Rpt., ¶¶316-34, 488-98, 1275-95, 1691-704.

[9] *See, e.g.*, Ex. 21, Nov. 6, 2021 FIC claim chart for '736 patent (SMARTi 5) at 16-19.

Mot. at 13-14. In ***that*** context, Dr. Subramanian stated that "ParkerVision's infringement contentions do not identify any particular characteristics required for an element 'of an energy transfer system'…." Mot. at 13-14 (quoting Ex. 30A, Sub. Op. Rpt., ¶¶492, 1280, 1695). He was stating correctly that ParkerVision had not explained how each accused Intel [redacted] He then explained at length how: the prior art capacitors "correspond[ed] directly" to the [redacted] and thus would invalidate under ParkerVision's stretch infringement theory under *01 Communique*. *See, e.g.*, Ex. 30A, Sub. Op. Rpt., ¶492-98, 1280-88, 1695-704. That was the correct invalidity analysis in view of ParkerVision's infringement contentions, and ParkerVision's motion should be denied on that basis alone.

ParkerVision argues that Dr. Subramanian should have done more analysis for the "storage element" limitations, based on two separate passages from its infringement contentions. Mot. at 14. ***First***, ParkerVision cites to a single paragraph in its Second Amended FICs. Mot. at 14 (citing Dkt. 176-24 at 20-21). But that paragraph (below)—which was not in ParkerVision's claim charts—sets forth only a general description of an "energy transfer system" and does not mention ParkerVision's alleged requirement of "low impedance load circuitry" (Mot. at 14). Moreover, it provides no evidence or substantive analysis regarding how any specific Intel product exhibits the characteristics allegedly required for "an energy transfer system":

[redacted]

Dkt. 176-24, Sec. Am. FICs, pp. 20-21. In any event, as noted below, Dr. Subramanian's analysis addressed the alleged features of an energy transfers system and demonstrated that the prior art

disclosed them [redacted] ***Second***, ParkerVision cites a page from its infringement contention claim chart for the '902 patent. Mot. at 14 (citing Dkt. 176-23 at 24). But that page does not address the "storage element" limitation or mention an "energy transfer system." Dkt. 176-23, Nov. 6, 2021 FICs for '902 patent (SMARTi 5), p. 24; *see generally id.*, pp. 1-38.

Moreover, Dr. Subramanian ***did*** substantively address each alleged feature of an energy transfer system throughout his invalidity report, repeatedly explaining that the prior art disclosed these features [redacted]. Dr. Subramanian's report belies ParkerVision's assertion that Dr. Subramanian "had no way to address" these features. Mot. at 14.

Regarding ParkerVision's alleged requirement that an energy transfer system "transfer[] energy to the low impedance load circuitry" (*id.*), Dr. Subramanian explained that the Intel [redacted]. *See, e.g.*, Ex. 30A, Sub. Op. Rpt., ¶¶494, 512, 529, 534. Nonetheless, Dr. Subramanian explained how the prior art operated [redacted]. *See, e.g.*, *id.*, ¶¶326-334, 511 ("According to ParkerVision's allegations, … [redacted] …."), 512, 513 ("Under ParkerVision's infringement theory, … the charging and discharging of Razavi's capacitors disclose this element."), 520 ("Under ParkerVision's infringement theory, such a modification would result in ***a low-impedance load*** into which the capacitors in Razavi's mixers … would discharge."), 564 ("Since ParkerVision's contentions appear to assume that any capacitor that discharges even minimal charge into a load is discharging into a low impedance load, then under ParkerVision's infringement theory, a conventional mixer followed by filters and an amplifier such as disclosed in Razavi alone would likewise satisfy this limitation."), 565-566, 981-985, 1388-1392, 1772-1776, 2135-2139, 2535-2539, 2947-2953.

Dr. Subramanian also repeatedly addressed the alleged requirements that an energy transfer system "fill[] in gaps between discrete signal portions being output from the switch" and "discharg[e] stored energy to form a lower frequency/down-converted signal." Mot. at 14. ParkerVision alleges that a sampling switch creates gaps in its output signal when it turns off and that the storage element discharges energy to fill those gaps and form a down-converted signal. Ex. 9, Steer Op. Rpt., ¶468. Dr. Subramanian disagreed that [redacted]. Nonetheless, Dr. Subramanian addressed these alleged requirements, for example, in his "storage element" analysis (e.g., Element [1c] of the '736 patent) where he explained that the accused [redacted]. *Id.*, ¶494 ("The capacitor [in Razavi] does not 'output[] a down-converted in-phase baseband signal portion …' as required by the claim, because [it] is merely a filtering capacitor that filters high frequency components …. [redacted]").[10] Dr. Subramanian also addressed these alleged requirements, for example, when he analyzed '736 patent Elements [1b] and [1f] (which require a sampling switch that generates a discrete-time signal and a storage element that discharges energy when the switch is off),[11] and Element [1h] (which requires the storage element to discharge energy to form the down-converted signal).[12]

[10] *See also id.*, ¶¶512, 907, 909, 1282, 1698, 2462, 2464, 2067.
[11] *See id.*, ¶¶474-87, 510-25, 873-98, 938-45, 1265-74, 1312-48, 1676-90, 1715-36, 2050-59, 2082-98, 2435-54, 2492-99, 2815-46, 2909-15.
[12] *See also id.*, ¶¶533-35, 952-54, 1355-57, 1744-46, 2106-08, 2506-08, 2922.

C. ParkerVision Is Not Entitled To Summary Judgment Of No Invalidity For Claims On Which Dr. Subramanian Made Conditional Invalidity Arguments Authorized by the Federal Circuit's *01 Communique* Decision.

ParkerVision seeks partial summary judgment of no invalidity with respect to some claims insofar as Dr. Subramanian opines that, if the claims are expanded to allegedly cover Intel's products ("under ParkerVision's infringement theory"), then the claims would be invalid. Mot. at 14-20. ParkerVision's argument (also made in its Motion to Exclude Certain Testimony of Dr. Subramanian (Dkt. 177)) is directly contrary to settled Federal Circuit law.

In *01 Communique*, the Federal Circuit held that "***[t]here [is] nothing improper***" with arguing "that ***if [the patentee] attempted to expand the scope of its claims to include systems [like the accused products], then the claims would be invalid in light of the prior art***." 889 F.3d at 741-42. There, the defendant argued that if the plaintiff attempted to expand the scope of its claims to cover the defendant's products, "the claims would be invalid in light of the prior art." *Id.* The Federal Circuit held that "[t]his argument … correctly recognized that claim terms must be 'construed the same way for both invalidity and infringement.'" *Id.* at 743. Thus, the Federal Circuit explained that a party is ***not*** precluded "from arguing that if a claim term must be broadly interpreted to read on an accused device, then this same broad construction will read on the prior art." *Id.* at 742. Dr. Subramanian's conclusion here—that if ParkerVision applies its claims broadly enough to cover the Intel products, then its claims would cover the prior art and be invalid—is exactly the argument endorsed by the Federal Circuit in *01 Communique.*

ParkerVision cites only two cases in support of its argument, both of which ***predate*** *01 Communique*. Mot. at 16 (citing *Genband US LLC v. Metaswitch Networks Corp.*, 2015 U.S. Dist. LEXIS 176746, at *7-8 (E.D. Tex. Sept. 30, 2015); *Metaswitch Networks Ltd. v. Genband US LLC*, 2016 U.S. Dist. LEXIS 28289, at *18 (E.D. Tex. Mar. 7, 2016)). Moreover, at least one decision from the same district court ***after*** *01 Communique* endorses "conditional" invalidity

arguments like Dr. Subramanian's here. *See Longhorn HD LLC v. NetScout Sys., Inc.*, 2022 WL 1792904, at *2 (E.D. Tex. Mar. 30, 2022) (denying summary judgment motion: "the invalidity opinions offered by NetScout's expert are arguably based on the claim scope as outlined in Longhorn's infringement contentions …. ***[T]he invalidity analysis to which Longhorn objects is an acceptable invalidity analysis under Communique***."). Other courts have too. *See Intel Corp. v. Tela Innovations, Inc.*, 2021 WL 1222622, at *35 (N.D. Cal. Feb. 11, 2021) (denying motion to strike "conditional" invalidity opinion of Dr. Subramanian: "[Dr. Subramanian] argues that if the asserted claims are interpreted broadly enough to apply to the Accused Products, they must also be interpreted broadly enough to apply to … the alleged prior art…. That argument is what the Federal Circuit explicitly approved in [*01 Communique*]").

ParkerVision also argues, with respect to the Tayloe reference (for which Dr. Subramanian's invalidity analysis did ***not*** rely on ParkerVision's infringement theories), that Dr. Subramanian provided only "an unsupported conclusory assertion" that Tayloe's storage element "*outputs* a down-converted … baseband signal *portion*" (as required claims 5 and 9 of the '528 patent and claims 1 and 27 of the '736 patent). Mot. at 17 (emphases ParkerVision's). ParkerVision is incorrect. For the '736 patent, Dr. Subramanian explained that Tayloe's capacitors (which are storage elements) charge to average values of the RF signal during different phases of the RF signal. *See, e.g.*, Ex. 30A, Sub. Op. Rpt., ¶2851. He then provided additional analysis (with extensive citations to Tayloe) describing how the capacitors form the down-converted baseband signal portions based on the "average values" noted above. *Id.*, ¶2855 ("Tayloe discloses that its capacitors 72, 74, 76, and 78 store energy from the input RF signal f1 … to produce the down-converted signal. Namely, the energy stored in the capacitor 72 forms the in-phase (0 degree) baseband signal portion of the input signal f1."). Dr. Subramanian's explanation (including

detailed excerpts from Tayloe) spans three pages and is neither conclusory nor unsupported. His analysis for the '528 patent refers back to the above analysis for the '736 patent and therefore likewise discloses how the limitation is met. *Id.*, ¶2974. Dr. Subramanian's analysis creates, at a minimum, a disputed issue of material fact.

D. ParkerVision Is Not Entitled To Summary Judgment That Claims Reciting A Differential Amplifier Outputting A Differential Signal Are Not Invalid.

ParkerVision seeks summary judgment of no invalidity for '528 patent claims 5 and 9 and '736 patent claims 1 and 27 because Tayloe (both alone and in combination with Palmer) allegedly does not disclose the claimed "differential amplifier circuit" that not only ***receives*** but also ***outputs*** a differential signal. Mot. at 20-22. ParkerVision is again wrong.

While Dr. Subramanian does not dispute that the differential amplifiers in Tayloe and Palmer output "single-ended"—rather than "differential"—signals, he explains why it would have been ***obvious*** to modify Tayloe's and Palmer's amplifiers to output differential signals. *See* Ex. 30A, Sub. Op. Rpt., ¶¶2929, 2932.[13] His analysis cites back to the explanation he gave for the combination of another reference (i.e., Razavi) with Palmer:

> [I]t would have been obvious to modify Palmer's differential amplifier to generate a differential output. A POSITA would have understood that differential amplifiers often use differential outputs when the signal is small and could otherwise disappear relative to noise on the reference (ground) line. This has been well-known for many decades, and a POSITA would know to apply differential outputs when the signal is small. The combination of Razavi and Palmer therefore renders Element [1j] obvious because a POSITA would have known that an output can be represented in either single-ended or differential form and that differential is favored for small signals. *See, e.g.*, U.S. Patent 5,021,744 to Van De Plassche at 2:5-8 ("Therefore, it is an object of the invention to provide a differential amplifier which enables both a single ended and a differential class A signal to be taken directly from its outputs.")).

[13] Dr. Subramanian's analysis for the '528 patent likewise relies on this same analysis, citing back his analysis of Tayloe with respect to Element [1j] of the '736 patent. *Id.* ¶2987.

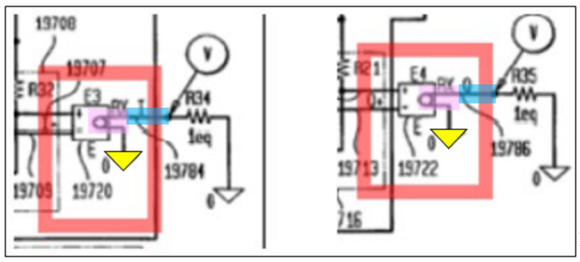
Id., ¶547. ParkerVision's argument ignores this obviousness argument, which, at a minimum, creates a factual dispute that precludes summary judgment.

ParkerVision also makes a naked assertion (without citing expert support) that "Palmer [] expressly teaches away from a differential signal." Mot. at 22. Such an unsupported allegation does not rebut Dr. Subramanian's obviousness analysis or meet ParkerVision's burden.

Finally, ParkerVision argues that partial summary judgment should be granted with respect to invalidity grounds based on Tayloe (alone and with Palmer) and "***any other*** prior art reference in view of Palmer." Mot. at 22. ParkerVision is again wrong. First, as noted above, ParkerVision's unsupported allegation that Palmer teaches away is insufficient to meet its burden of showing no genuine issue of material fact as to invalidity. Second, for every invalidity ground on which Dr. Subramanian relied on Palmer, he refers back to the same analysis cited above explaining why it would have been obvious to output a down-converted differential baseband signal. *See* Ex. 30A, Sub. Op. Rpt., ¶¶961, 1015, 1363, 1422, 1754, 1806, 2115, 2169, 2517, 2569.

E. ParkerVision Is Not Entitled To Summary Judgment Of No Invalidity For Lack Of Written Description.

ParkerVision seeks summary judgment that '528 patent claims 5 and 9 and '736 patent claims 1 and 27 are not invalid for lack of written description. Mot. at 22-23. Dr. Subramanian explained in his opening report that these claims are invalid because the specification does not disclose the claimed differential amplifier circuit, which not only receives a differential signal but also ***outputs*** a differential signal. Ex. 30A, Sub. Op. Rpt., ¶546. ParkerVision argues that Figure 201 (below) from those patents provides written description because it shows differential amplifiers 19720 and 19722 (red), each allegedly outputting a differential signal via two outputs (pink). Mot. at 22. ParkerVision is wrong.



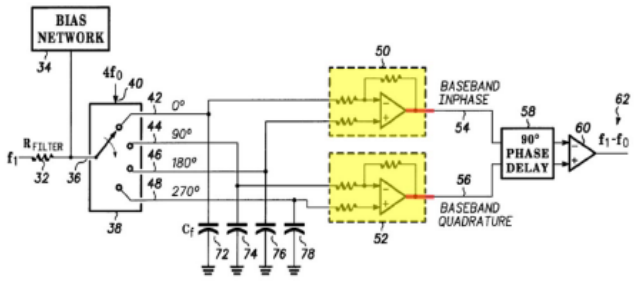
[14]

As Dr. Subramanian explained, a differential signal has two components that are the inverse of each other. Ex. 30A, Sub. Op. Rpt., ¶171 ("Differential signaling involves transmitting a signal over two wires rather than just one—but the signal transmitted on one of the lines is intentionally 'inverted' (i.e., shifted by 180 degrees so that it has the opposite value)."); *accord* Ex. 9, Steer Reb. Rpt., ¶208 n.7. Neither amplifier in Figure 201 outputs a ***differential*** signal because the lower output of each amplifier is connected to ground (yellow) and thus outputs a constant zero volts, while the upper output (blue) outputs a down-converted signal with a voltage that changes. Since these signals are not the inverse of each other, the amplifiers do not output a ***differential*** signal as the claims require. Ex. 30A, Sub. Op. Rpt., ¶171.

This fact is confirmed by Figures 197 and 213, which show the same differential amplifiers 19720 and 19722 outputting single-ended baseband signals (red).

Dkt. 1-7, '736 patent, Fig. 197; *see also id.*, Fig. 213 (showing amplifier 19720 with single-ended output). Indeed, Figures 197 and 213 depict amplifiers 19720 and 19722 as outputting single-ended signals in the same way as the Tayloe and Palmer figures that ***ParkerVision itself*** cited and reproduced in its Motion as examples of amplifiers outputting ***single-ended*** signals:

[14] Red markings in ParkerVision's Motion (at 22). Blue, yellow, and pink markings added here.



30 *FIG. 3*

Mot. at 20 (showing Tayloe Fig. 3; "Each amplifier has a single-ended output (one line coming out, shown in red) …."); *see also* Mot. at 21 (showing Tayloe Fig. 3 with Palmer's amplifiers; "Each Palmer amplifier … has a single-ended output (one line coming out, shown in red) ….").

V. PARKERVISION'S ARGUMENT THAT CERTAIN LIMITATIONS ARE SATISFIED AS A MATTER OF LAW BY THE PRODUCTS-AT-ISSUE FAILS

Finally, ParkerVision seeks summary judgment that the Intel Products-At-Issue meet purported "key limitations" of claims 6 and 16 of the '725 patent, claims 1 and 27 of the '736 patent, and claims 5 and 17 of the '673. Mot. at 2, 23-25. Yet ParkerVision fails even to specify the "limitations" that it says are satisfied—referring only vaguely to "the charging and discharging claim elements" (*id.* at 25)—much less engage with the claim requirements or the ample evidence showing, at a minimum, genuine disputes of material fact precluding summary judgment.

A. The Evidence Shows That The Intel Products-At-Issue Do Not Meet The "Charging And Discharging" Claim Limitations.

ParkerVision fails to explain what it means by "the charging and discharging" requirements (Mot. at 23-25), but appears to be referring to the following limitations:

Patent Claim	Limitation
Dkt. 1-5, '725 patent, cl. 1 (from which cls. 6 and 16 depend)	"the switching device … receiving … a control signal that controls a charging and discharging cycle of the storage module by controlling the switching device so that ***a portion of energy is transferred from the RF information signal to the storage module during a charging part of the cycle and a portion of the transferred energy is discharged during a discharging part of the cycle***"
Dkt. 1-7, '736 patent, cl. 1	"the first and second control signals each control a charging and discharging cycle of their respective energy storage element so that for each switch ***a***

(from which cls. 27 depends)	***portion of energy from the modulated carrier signal is transferred to the respective energy storage element when the respective switch is on during the charging cycle***, and ***a portion of previously transferred energy is discharged during the discharging cycle for each respective switch when the respective switch is off***"
Dkt. 1-8, '673 patent, cl. 1 (from which cl. 5 depends)	"said pulses cause said switch to open outside of said apertures and cause said switch to close and sample the modulated carrier signal during said apertures ***by transferring energy from the modulated carrier signal and accumulating the transferred energy in said capacitor each time said switch is closed***; and wherein ***some of the previously accumulated energy is discharged from said capacitor into load circuitry each time said switch is open***"
Dkt. 1-8, '673 patent, cl. 13 (from which cl. 17 depends)	"an energy storage device … coupled to the switch which (a) ***when the switch is on during the first sampling aperture, charges to store the first sample of energy …***, (b) ***when the switch is off between the first sampling aperture and the second sampling aperture, discharges some of the first accumulation of energy ….***"

These limitations require the "storage element" to ***gain*** energy when the corresponding switch is ***on***, and then ***discharge*** energy while the switch is ***off***. *Id.*; *see* Ex. 30B, Sub. Reb. Rpt., ¶851.

But as Dr. Subramanian explained, and as ParkerVision fails to address in its motion (Mot. at 23-25), [redacted]. Ex. 30B, Sub. Reb. Rpt., ¶¶851-61. Among other evidence, Dr. Subramanian performed simulations of the Intel products using models from ParkerVision's own expert, Dr. Steer. *Id.* [redacted]:

[redacted]

Id., ¶¶859 (SMARTi 5); *see id.*, ¶¶859-61 (results for other Intel products). As shown above, [redacted] *Id.*, ¶860. This evidence alone demonstrates disputed factual issues precluding summary judgment.[15]

B. ParkerVision's Evidence Does Not Establish That The Limitations Are Met.

ParkerVision bases its argument solely on [redacted].[16] Mot. at 23-25. [redacted] Mot. at 25. That is wrong. [redacted] *See* Ex. 30A, Sub. Op. Rpt.,

[15] ParkerVision's arguments in its *Daubert* motion challenging Dr. Subramanian's simulation-related opinions (Dkt. 177) are inapplicable here because the simulations discussed here are based on ParkerVision expert Dr. Steer's own models. Ex. 30B, Sub. Reb. Rpt., ¶¶851-61; *see also* Intel Corporation's Response to Motion to Exclude Certain Expert Testimony of Dr. Vivek Subramanian (filed concurrently with this brief), Section III.

[16] The experts agree that signals can be represented in either the "***time*** domain"—whereby the graph shows the signal's voltage or current as it changes over ***time*** (as in the figures above)—or in the "***frequency*** domain"—whereby the graph shows how much of the signal is present at each different ***frequency***. Ex. 30B, Sub. Reb. Rpt., ¶¶209-13; Ex. 9, Steer Op. Rpt., ¶¶141-42.

¶¶60, 91-94, 125-126. [redacted]

See Ex. 30B, Sub. Reb. Rpt., ¶¶853-55. [redacted]

Ex. 30B, Sub. Reb. Rpt., ¶¶818-19 (green annotation added) (showing results of simulation for SMARTi 5); *see also* Ex. 30B, Sub. Reb. Rpt., App. A, ¶¶207-08 (SMARTi 7), Ex. 30B, Sub. Reb.

Rpt., App. B, ¶¶50-51 (SMARTi 4G), 109-11 (SMARTi 7), 170-71 (SMARTi 8).

Second, ParkerVision has also failed to show the required charging/discharging behavior. As explained above, the claims require that the claimed storage element charge when its corresponding switch is ***on*** and discharge when the switch is ***off***. *Supra* §V(A). [redacted]. *Supra* n.16; *see* Mot. at 23-25. ParkerVision's expert Dr. Steer effectively conceded as much: he argued that [redacted] Ex. 9, Steer Op. Rpt., ¶142. [redacted] *Supra* §V(A).[17]

VI. CONCLUSION

For the foregoing reasons, ParkerVision's motion should be denied.

[17] The frequency domain figures also fail to show the requirements that "the energy discharged during any given discharge cycle is not completely discharged" (Dkt. 1-7, '736 patent, cls. 1, 11); "the remaining undischarged energy from the given discharge cycle becom[e] an initial condition for a next charging cycle that begins immediately following the given discharge cycle" (*id.*); or the energy is discharged to a "low impedance load" (*id.*, cl. 27; Dkt. 1-8, '673 patent, cls. 5, 27).

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that all counsel of record are being served with a copy of the foregoing document via electronic mail on November 15, 2022.

/s/ J. Stephen Ravel
J. Stephen Ravel